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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,065	03/23/2004	Kiyotaka Mori	MATB-405US	4072

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EXAMINER

HU, SHOUXIANG

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/807,065

Applicant(s)

MORI ET AL.

Examiner

Shouxiang Hu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 6-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8/5/05, 6/25/04, 3/</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Claims 6-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on November 14, 2005.

Applicant's election with traverse of Species 1 in the above reply is acknowledged. The traversal is on the ground(s) that claims 1-5 are generic to Species 1 and 2. This is not found persuasive because Species 1 and 2 are apparently patentably mutually distinctive, as shown in Figs. 1 and 2, respectively, regardless whether or not claims 1-5 are generic to them.

Nevertheless, for expediting the prosecution process, all claims that are readable on Species 1 with or without embodiments of Figs. 3, 4 and 7 are maintained to be active in this office action. And, these claims are identified as claims 1-5, same as the ones elected by applicant.

Furthermore, it is reassured that, upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 101 and/or 112

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4 and 5, as being supported by elected species, are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility.

Claims 4 and 5 claims a device with tensile stress applied to the recited organic semiconductor based on its thermal expansion coefficient different from that of the substrate, so as to intently reduce the mobility of in the organic semiconductor in the elected species of the instant invention. However, the disclosure fails to provide a specific and substantial asserted utility or a well established utility for such device with the intently reduced mobility in the organic semiconductor of the elected species, given that the mobility in the conventionally available organic semiconductors is already and “unfortunately” too low, as admitted in the instant specification (see the Background section). It is not clear what is/are the specific and substantial purpose(s) and/or application(s) to further reduce the already-too-low mobility in the organic semiconductor in the device of the elected species.

Claims 4 and 5, as being supported by elected species, are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported

by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Or, in alternative, claim 4, as being supported by elected species, is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 4 recites the subject matter of a device with tensile stress applied to the recited organic semiconductor based on its thermal expansion coefficient different from that of the substrate. However, if the resulted tensile is intended for increasing carrier mobility in the organic semiconductor, the disclosure then lacks an adequate description about what specific and/or substantially material the recited organic semiconductor is formed of, so as to have the intended increase of mobility under tensile stress therein.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, as being supported by the elected species, are rejected under 35 U.S.C. 102(e) as being anticipated by Bao (US 2005/0121728 A1).

Bao discloses a semiconductor device (Fig.1-3; also see Paragraphs [003], [004], [014], [015], [022], [023] and [031]), comprising: a substrate (205) having a first thermal expansion coefficient; and an organic semiconductor material (150) coupled to the substrate at an interface therebetween, wherein the organic semiconductor material has a second thermal expansion coefficient that is naturally different from the first thermal expansion coefficient; a compressive mechanical stress related to the difference of the thermal expansion coefficients is naturally transferred from the substrate to the organic semiconductor material through the interface; and the compressive stress naturally decreases a distance between adjacent molecules in the organic semiconductor material, thereby increasing carrier mobility of the organic semiconductor material, as the organic semiconductor material in Bao comprises neighboring pi-orbitals, in the same manner as that in the instant invention.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References B-G are cited as being related to an organic-semiconductor-based device structure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-

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1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH
January 22, 2006



SHOUXIANG HU
PRIMARY EXAMINER